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## HB 168 ESTABLISHES A PER SE THRESHOLD IN BLOOD FOR DELTA-9-TETRAHYDROCANNABINOL (THC) AND DISTINGUISHES THC FROM ITS METABOLITES

- THC is the active or impairing compound in marijuana
- When you use marijuana you get measurable amounts of THC in your blood
- After smoking marijuana the THC levels in the blood decrease rapidly as the body starts to convert the THC into other compounds called metabolites
- The metabolites can be detected in a person's blood or urine for days after their last marijuana use
- Currently scientists only focus on blood THC levels to determine marijuana impairment

## SCIENCE SUPPORTS A 5 NG/ML BLOOD THC LIMIT AS A REASONABLE GUIDELINE FOR SEPARATING IMPAIRED FROM UNIMPAIRED DRIVERS

- Marijuana can impair driving skills for up to 3-4 hours after use. Larger doses and oral intake can extend the period of impairment
- Blood THC levels 5 ng/ml and above have been associated with recent marijuana use and impairment
- Studies of marijuana use and driving have found that THC levels exceeding 5 ng/ml are associated with an increased risk of accidents and fatalities

## HEAVY MARIJUANA USERS SHOULD HAVE THEIR BLOOD THC LEVEL FALL BELOW 5 NG/ML IF THEY WAIT A FEW HOURS BEFORE DRIVING

- A study done by researchers from the National Institute on Drug Abuse, the National Institute of Health, and Harvard medical school did a study on 25 frequent long term marijuana users who had, on average, used marijuana for 8.8 years (5)
- Most participants had used marijuana 24 hrs before beginning the study and they were to remain drug free for 7 days while researchers monitored their blood THC level
- During the study only one participant had a blood THC level above 5 ng/ml and this was on the day of admission when it was not clear how much time had elapsed between her last drug use and the first blood draw. By the next morning this individual's blood THC level had dropped below 5 ng/ml

## Bibliography for Marijuana Impairment and Driving

- Asbridge, Hayden, Cartwright. "Acute Cannabis Consumption and Motor Vehicle Collision Risk: Systematic Review of Observational Studies and meta-analysis." BMJ (2012) 344.
- 2. Ramaekers, Berghaus, Van Laar, Drummer. "Dose Related Risk of Motor Vehicle Crashes After Cannabis Use." Drug and Alcohol Dependence. 73 (2004) 109-119.
- 3. Blows, et al. "Marijuana use and car crash injury." Addiction. 100. 605-611.
- 4. "Position on the Use of Cannabis (Marijuana) and Driving." Journal of Analytical Toxicology. 2013;37:47-49.
- Karschner et al. "Do Δ9-Tetrahydrocannabinol Concentrations Indicate Recent Use in Chronic Cannabis Users?" Addiction 104 (2009), 2041-2048.
- 6. Khiabani, Bramness, Bjorneboe, Morland. "Relationship Between THC Concentration in Blood and Impairment in Apprehended Drivers." *Traffic Injury Prevention.* 7, (2006), 111-116.
- Papafotiou, Carter, Stough. "The Relationship Between Performance on the Standardized Field Sobriety Tests, Driving Performance and the Level of Δ9-Tetrahydrocannabinol (THC) in Blood." Forensic Science International. 155 (2005) 172-178.
- Weinstein, et al. "A Study Investigating the Acute Dose-Response Effects of 13 mg and 17 mg
  Δ9-Tetrahydrocannabinol on Cognitive-Motor Skills, Subjective and Autonomic Measures in
  Regular Users of Marijuana." *Journal of Psychopharmacology*. 22(4), (2008), 441-451.
- 9. Grotenhermen, et al. "Developing Science-Based Per Se Limits for Driving Under the Influence of Cannabis (DUIC)." *Findings by an Expert Panel: DUIC Report.* September 2005.
- 10. Grotenhermen et al. "Developing Limits for Driving Under Cannabis." *Addiction*. 102, (2007), 1910-1917.
- Ramaekers, et al. "Cognition and Motor Control as a Function of Δ9 THC Concentration in Serum and Oral Fluid: Limits of Impairment." Drug and Alcohol Dependence 85 (2006) 114-122
- 12. Menetrey et al. "Assessment of Driving Capability Through the Use of Clinical and Psychomotor Tests in Relation to Blood Cannabinoids Levels Following Oral Administration of 20 mg Dronabinol or of a Cannabis Decoction Made with 20 or 60 mg Delta-9-THC." *Journal of Analytical Toxicology.* Vol. 29. July/August 2005.
- 13. Ramaekers et al. "Marijuana, Alcohol, and Actual Driving Performance." *Human Physchopharmacology. Clin. Exp.* 15, 551-558 (2000).
- 14. Lamers and Ramaekers. "Visual Search and Urban City Driving Under the Influence of Marijuana and Alcohol." *Human Physchopharmacology Clin. Exp.* 16: 393-401.
- 15. Robbe, O'Hanlon. "Marijuana, Alcohol and Actual Driving Performance." NHTSA DOT HS 808 93.
- 16. Robbe. "Marijuana's Effects on Driving are Moderate When Taken Alone but Severe When Combined with Alcohol." *Human Psychopharmacology Clin. Exp.* 13, S70-S78 (1998).